Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of preparing samples for analysis in headspace gas chromatography comprising the steps of ~~using ionic liquids as solvents in headspace gas chromatography wherein said method comprises~~ dissolving or dispersing a sample in at least one ionic liquid, wherein the ionic liquid is a molten salt and volatilizing the volatile components of the sample.

Claim 2 (previously presented): The method according to claim 1 wherein the ionic liquid has a melting point of less than 100°C.

Claim 3 (original): The method according to claim 2 wherein the ionic liquid has a melting point of less than 30°C.

Claim 4 (previously presented): The method according to claim 1 wherein the ionic liquid has a vapor pressure of less than about 1 mm/Hg at 25°C.

Claim 5 (original): The method according to claim 4 wherein the ionic liquid has a vapor pressure of less than about 0.1 mm/Hg at 25°C.

Claim 6 (original): The method according to claim 5 wherein the ionic liquid has essentially no vapor pressure.

Claim 7 (previously presented): The method according to claim 1 wherein the thermal stability of the ionic liquid is from 150°C to 400° C.

Claim 8 (original): The method according to claim 7 wherein the thermal stability of the ionic liquid is from 200° C to 300° C.

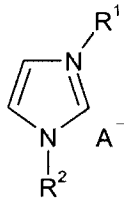
Claim 9 (previously presented): The method according to claim 1 wherein the ionic liquid has a melting point of less than 250°C, a vapor pressure less than about 1mm/Hg at 25°C and the thermal stability of the ionic liquid is from 150° C to 400° C.

Claim 10: (previously presented): The method according to claim 1 wherein the anion of the ionic liquid is selected from the group consisting of Cl^-, Br^-, NO_2^-, NO_3^-, $AlCl_4^-$, BF_4^-, PF_6^- ,CF_3COO^-, $CF_3SO_3^-$, $(CF_3SO_2)_2N^-$, OAc^-, $CuCl_3^-$, $GaBr_4^-$, $GaCl_4^-$, and SbF_6^-.

Claim 11 (previously presented): The method according to claim 1 wherein the cation of the ionic liquid is selected from the group consisting of pyridinium, ammonium, imidazolium, phosphonium, and sulphonium.

Claim 12 (previously presented): The method according to claim 1 wherein the ionic liquid is selected from the group consisting of an imidazolium salt, pyridinium salt, ammonium salt, phosphonium salt, and sulphonium salt, and mixtures thereof.

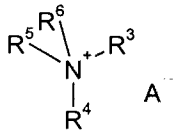
Claim 13 (original): The method according to claim 12 wherein the imidazolium salt has formula (I)



(I)

wherein R^1 and R^2 are independently selected from the group consisting of a C_1-C_{18} aliphatic group and a C_4-C_{18} aromatic group; and A^- is an anion.

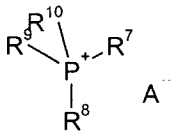
Claim 14 (original): The method according to claim 12 wherein the ammonium salt has formula (II)



(II)

wherein R^3, R^4, R^5 and R^6 are independently selected from the group consisting of a C_1-C_{18} aliphatic group and a C_4-C_{18} aromatic group; and A^- is an anion.

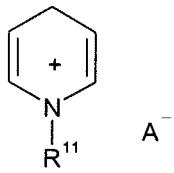
Claim 15 (original): The method according to claim 12 wherein the phosphonium salt has formula (III)



(III)

wherein R^7, R^8, R^9, and R^{10} are independently selected from the group consisting of a C_1-C_{18} aliphatic group and a C_4-C_{18} aromatic group; and A^- is an anion.

Claim 16 (original): The method according to claim 12 wherein the pyridinium salt has formula (IV)



(IV)

wherein R^{11} is selected from the group consisting of a C_1-C_{18} aliphatic group and a C_4-C_{18} aromatic group; and A^- is an anion.

Claim 17 (previously presented): The method according to claim 1 wherein the ionic liquid is selected from the group consisting of 1-butyl-3-methylimidazolium hexafluorophosphate, 1-hexyl-3-methylimidazolium hexafluorophosphate, 1-octyl-3-methylimidazolium hexafluorophosphate, 1-decyl-3-methylimidazolium hexafluorophosphate, 1-dodecyl-3-methylimidazolium hexafluorophosphate, 1-ethyl-3-methylimidazolium bis((trifluoromethyl)sulphonyl)amide, 1-hexyl-3-methylimidazolium bis((trifluoromethyl)sulphonyl)amide, 1-hexylpyridinium tetrafluoroborate, 1-octylpyridinium tetrafluoroborate, 1-butyl-3-methylimidazolium tetrafluoroborate, 1-methyl-3-ethyl imidazolium chloride, 1-ethyl-3-butyl imidazolium chloride, 1-methyl-3-butyl imidazolium chloride, 1-methyl-3-butyl imidazolium bromide, 1-methyl-3-propyl imidazolium chloride, 1-methyl-3-hexyl imidazolium chloride; 1-methyl-3-octyl imidazolium chloride, 1-methyl-3-decyl imidazolium chloride, 1-methyl-3-dodecyl imidazolium chloride, 1-methyl-3-hexadecyl imidazolium chloride, 1-methyl-3-octadecyl imidazolium chloride, 1-methyl-3-octadecyl imidazolium chloride; ethyl pyridinium bromide, ethyl pyridinium chloride, ethylene pyridinium dibromide, ethylene pyridinium dichloride, butyl pyridinium chloride, benzyl pyridinium bromide, and mixtures thereof.

Claim 18 (original): The method according to claim 17 wherein the ionic liquid is selected from the group consisting of 1-octyl-3-methyl-imidazolium hexafluorophosphate, 1-hexyl-3-methy-imidazolium hexafluorophosphate, 1-butyl-3-methyl-imidazolium hexafluorophosphate, 1-butyl-3-methyl-imidazolium tetrafluoroborate, 1-butyl-3-methyl-imidazolium trifluoromethanesulfonate, 1-ethyl-3-methyl-imidazolium trifluoromethanesulfonate, and 1-ethyl-3-methyl-imidazolium bis-(trifluoromethanesulfonyl)-amide.

Claims 19 through 23(cancelled)